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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,292	02/15/2002	Ludger Mimberg	NVID-P000406	3407

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WAGNER, MURABITO & HAO LLP
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EXAMINER

SUN, XIUQIN

ART UNIT PAPER NUMBER

2863

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/078,292

Applicant(s)

MIMBERG ET AL.

Examiner

Xiuqin Sun

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. Specifically, the Abstract of the Disclosure is objected to because it can not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

Claim Objection

3. Claim 6 is objected to because of the following minor informalities:

Claim 6, line 2, change "temperature the processor" to -temperature of the processor--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 4, 8-10, 14, 17-18, 22, 25, 26, 30, 33, 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Bausch et al. (U.S. Pat. No. 6304824).

Bausch et al. teach a processor power supply voltage controller (see Abstract) comprising: an on-chip temperature sensor configured to sense a temperature of a processor and generate a temperature signal in accordance therewith (col. 5, lines 58-67; col. 6, lines 53-62 and col. 7, lines 14-40); and a regulator coupled to provide a power supply voltage to the processor, the regulator coupled to receive the temperature signal and control the power supply voltage (col. 3, lines 18-25, lines 47-55; col. 4, lines 43-67; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62). Bausch et al. further teach

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that: said temperature sensor further comprises a thermal diode circuit (col. 7, lines 41-52); said regulator controls the power supply voltage to maintain a substantially stable crosstalk level within the processor (col. 3, lines 18-25; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62).

Bausch et al. further teach a system for maintaining a crosstalk level within an electronic device over a variable temperature range (see Abstract), said system comprising: a voltage supply circuit for supplying an output voltage to said electronic device (col. 3, lines 64-66 and col. 4, lines 29-32); and a temperature sensitive element coupled to said voltage supply circuit (col. 5, lines 58-67; col. 6, lines 53-62 and col. 7, lines 14-40) and for maintaining a substantially constant crosstalk level within said electronic device by regulating said output voltage of said voltage supply circuit, wherein said voltage supply circuit increases said output voltage in response to a temperature increase and wherein said voltage supply circuit decreases said output voltage in response to a temperature decrease (col. 3, lines 18-25, lines 47-55; col. 4, lines 43-67; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62). Bausch et al. further teach that: said electronic device is a semiconductor device (col.3, lines 2-4 and col. 5, lines 44-50); said temperature sensitive element is a thermistor (col. 7, lines 14-40).

Bausch et al. further teach an electronic system comprising: a semiconductor device operated over a variable temperature range (col. 3, lines 1-5, lines 47-55 and col. 5, lines 44-50); a voltage supply circuit supplying an output voltage to said semiconductor device for supplying power thereto (col. 3, lines 64-66 and col. 4, lines 29-32); and a temperature sensitive element coupled to said voltage supply circuit (col.

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5, lines 58-67; col. 6, lines 53-62 and col. 7, lines 14-40) and for maintaining a substantially constant crosstalk level within said semiconductor device over said variable temperature range by regulating said output voltage of said voltage supply circuit, wherein said voltage supply circuit, in response to said temperature sensitive element, increases said output voltage when said temperature increases and wherein said voltage supply circuit, in response to said temperature sensitive element, decreases said output voltage when said temperature decreases (col. 3, lines 18-25, lines 47-55; col. 4, lines 43-67; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62).

Bausch et al. further teach a method of regulating an amount of crosstalk of an electronic device (see Abstract) comprising: operating said electronic device over a variable temperature range (col. 3, lines 1-5, lines 47-55); detecting an ambient temperature adjacent to said electronic device (col. 7, lines 14-40); in response to said detecting, increasing a voltage supplied to said electronic device if said ambient temperature increases; and in response to said detecting, decreasing said voltage supplied to said electronic device if said ambient temperature decreases, wherein said increasing and said decreasing are performed to regulate said crosstalk of said electronic device (col. 3, lines 18-25, lines 47-55; col. 4, lines 43-67; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62). Bausch et al. further teach that: said detecting is performed by a temperature sensitive element disposed near said electronic device (col. 7, lines 14-40); and said electronic device is a semiconductor device (col. 3, lines 1-5 and col. 5, lines 44-50).

Bausch et al. further teach an electronic system comprising: a semiconductor device operated over a variable temperature range (col. 3, lines 1-5, lines 47-55 and col. 5, lines 44-50); a voltage supply circuit supplying an output voltage to said semiconductor device for supplying power thereto (col. 3, lines 64-66 and col. 4, lines 29-32); and a temperature sensitive element coupled to said voltage supply circuit (col. 7, lines 14-40) and for regulating said output voltage of said voltage supply circuit, said temperature sensitive element configured for detecting an ambient temperature adjacent to said semiconductor device and in response to said detecting, increase said output voltage if said ambient temperature increases and decrease said output voltage supplied to said semiconductor device if said ambient temperature decreases, wherein said increasing and said decreasing are performed to regulate crosstalk of said electronic device (col. 3, lines 18-25, lines 47-55; col. 4, lines 43-67; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62).

Bausch et al. further teach a system for maintaining a crosstalk level within an electronic device over a variable temperature range (see Abstract), said system comprising: a voltage supply circuit for supplying an output voltage to said electronic device (col. 3, lines 64-66 and col. 4, lines 29-32); a feedback circuit coupled to said voltage supply circuit (col. 5, lines 58-67 and col. 7, lines 14-40); and a temperature sensitive element (col. 7, lines 14-40) coupled to said voltage supply circuit and said feedback circuit for detecting a temperature of said electronic device and for maintaining a substantially constant crosstalk level within said electronic device by regulating said output voltage of said voltage supply circuit, said voltage supply circuit configured to

increase said output voltage in response to said feedback circuit signaling a temperature increase and decrease said output voltage in response to said feedback circuit signaling a temperature decrease ((col. 3, lines 18-25, lines 47-55; col. 4, lines 43-67; col. 5, lines 58-67; col. 6, lines 1-4, and lines 53-62).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 3, 13, 21, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bausch et al. in view of Hunsdorf et al. (U.S. Pat. No. 5757172).

Bausch et al. teach a processor power supply voltage controller, a system and method for maintaining a crosstalk level within an electronic device that includes the subject matter discussed above. Bausch et al. do not mention: said temperature sensor further comprises a negative temperature coefficient (NTC) resistor; a feedback circuit coupled to the negative temperature coefficient resistor, said feedback circuit configured to generate the temperature signal for the regulator.

Hunsdorf et al. disclose a voltage regulator coupled to a temperature sensor (see Abstract), and teach: said temperature sensor comprises a negative temperature coefficient (NTC) resistor, and a feedback circuit coupled to the negative temperature

coefficient resistor, said feedback circuit configured to generate the temperature signal for the regulator (col. 3, lines 27-50 and col. 4, lines 9-13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teachings of Hunsdorf et al. in the Bausch system in order to automatically adjust the voltage linearly based on the output from the temperature sensor (Hunsdorf et al., col. 1, lines 54-67; col. 2, lines 1-5 and col. 3, lines 27-50).

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bausch et al. in view of Lee et al. (U.S. Pub. No. 20010045779 A1).

Bausch et al. teach a processor power supply voltage controller and a system and method for maintaining a crosstalk level within an electronic device that includes the subject matter discussed above. Bausch et al. do not mention: said temperature sensor is configured to sense the temperature of the processor by sensing a temperature of a heat sink coupled to the processor; said temperature sensor is configured to sense the temperature of the processor by sensing a temperature of an enclosure including the processor.

Lee et al. disclose an intelligent power system, and suggest to monitor the temperature of the peripherals that utilize the power supply by sensing a temperature of a heat sink coupled to the peripherals as well as a temperature of an enclosure including the device that utilizes the power supply (section 0013, and section 0020, lines 10-17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Lee et al. in the Bausch system in order for the voltage controller to collect as much information as possible from the peripherals that utilize the power supply to regulate the voltage supply more intelligently (Lee et al., sections 0004 and 0013).

9. Claims 7, 11, 15, 19, 23, 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bausch et al. in view of Reinhardt et al. (U.S. Pat. No. 5745375).

Bausch et al. teach a processor power supply voltage controller and a system and method for maintaining a crosstalk level within an electronic device that includes the subject matter discussed above. Bausch et al. do not mention: said temperature sensor is configured to sense the temperature of the processor by sensing a die temperature of the processor; said semiconductor device is a central processing unit (CPU); and said voltage supply circuit is a switch mode power supply circuit.

Reinhardt et al. teach a power control circuit, including: a temperature sensor configured to sense the temperature of a processor of a central processing unit (CPU) by sensing a die temperature of the processor (col. 4, lines 31-45); said voltage supply circuit is a switch mode power supply circuit (col. 4, lines 64-67 and col. 5, lines 1-14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teachings of Reinhardt et al. in the Bausch system in order to provide a power control circuit that can be used by any type of electronic devices (Reinhardt et al., col. 2, lines 5-9).

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bausch et al. in view of Brown (U.S. Pat. No. 5568350).

Bausch et al. teach a processor power supply voltage controller and a system and method for maintaining a crosstalk level within an electronic device that includes the subject matter discussed above. Bausch et al. do not mention: said regulator is coupled to provide the power supply voltage to a plurality of power supply voltage inputs of the processor.

Brown discloses a power supply system including a regulator, and said regulator is coupled to the power supply voltage to provide a plurality of power supply voltage inputs of a processor (col. 2, lines 30-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Brown in the Bausch system in order to provide a plurality of voltage levels required by the processor (Brown, col. 2, lines 30-52).

11. Claims 12, 16, 20, 24 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bausch et al. in view of Patel et al. (U.S. Pat. No. 6025737).

Bausch et al. teach a processor power supply voltage controller and a system and method for maintaining a crosstalk level within an electronic device that includes the subject matter discussed above. Bausch et al. do not mention: said semiconductor device is a graphics processing unit; and said temperature sensitive element, said voltage supply circuit and said electronic device are all mounted on a common electronic PC board.

Patel et al. disclose a circuit for low internal voltage integrated circuit, and teach that: said integrated circuit is a graphics processing unit (col. 4, lines 34-41); and a voltage supply circuit and said integrated circuit are all mounted on a common electronic PC board (col. 2, lines 3-26; col. 3, lines 66-67 and col. 4, lines 1-21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Patel et al. in the Bausch system in order to provide an on-chip voltage supply circuit that can be utilized by any type of processing unit (Patel et al., col. 2, lines 3-50).

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (703)305-3467. The examiner can normally be reached on 7:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

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May 19, 2003

John Barlow
John Barlow
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